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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,308	03/31/2000	Val Teodorescu	1285-0007 ALC-1131-00	9948

24587 7590 05/05/2004

ALCATEL USA
INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER

SCHEIBEL, ROBERT C

ART UNIT	PAPER NUMBER
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2666

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DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/540,308

Applicant(s)

TEODORESCU, VAL

Examiner

Robert C. Scheibel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-17 is/are rejected.
- 7) ☒ Claim(s) 18-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1, 4-5, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,907,559 to Shuman et al in view of U.S. Patent 5,892,812 to Pester,
- III.

Regarding claims 1 and 4, Shuman discloses the tree configuration described in the preamble of claim 1 in both the title of the patent "Communications system having a tree structure" as well as in lines 56-57 of column 2: "The distributed multiplexing is achieved by using a multi-level tree network". The controller is the computer 30 of figure 1. The step of generating alarm data by cards disposed at a select stage in said tree configuration in claim 1 is taught by the sensor data of Shuman. The cards are the sensor data register (Figure 2B and element 70 in Figure 6). The sensor data is equivalent to alarm data in that it is data that can alert personnel that some action must be taken. This is taught in lines 25-27 of column 1 "These data can alert personnel to the need for control measures and can be input directly to expert management decision support systems". Shuman discloses the step of transmitting, by bus control modules interfacing with said cards at said select stage, said alarm data to distribution module

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cards disposed at a subsequent stage of the tree configuration in Figures 1 and lines 27-29 of column 3 "sensor level modules which continually read and serially transmit all the stored data to the previous (last multiplexing level) modules". Based on the claim language, the sensor level modules of figure 1 are interpreted as the bus control modules (bus control module cards) and the multiplexing level modules are interpreted as the distribution module cards (clock distribution module cards). Shuman discloses the step of multiplexing, by the distribution module cards, the alarm data in the 8-1 MUX (62) of figure 4. Shuman discloses the step of forwarding the serial bitstream, by said distribution module cards, through the tree configuration to a single bitstream at the trunk of the tree configuration in lines 59-62 of column 9 "This then allows the data on the data line selected by multiplexer 62 to be transmitted to the upstream multiplexing modules and eventually to the computer". The data is transmitted to the computer over an RS-422 as shown in the RS-422 channel between the RS422 transceivers 42 and 43 of figure 2A. This is equivalent to the serial bitstream at the trunk of the tree in claim 1. Shuman discloses the step of providing the bitstream to a controller controlling the tree configuration in the computer 30 of figures 1 and 2a. This computer controls the tree configuration; as an example, consider the sending of the addressing information described in lines 61-65 of column 4.

Shuman does not disclose expressly the step of inserting into the bitstream any alarm data pertaining to cards disposed at said subsequent stage.

Pester III discloses the limitation of inserting alarm data at a subsequent stage which pertains to this stage. This limitation is taught in lines 38-40 of column 2: "If

Stage 2 determines that there is an STP pair network trouble, it generates alarm and corrective action information and passes it to the Stage 3 controller or process". The STP pair network trouble is the alarm data pertaining to stage 2.

Shuman and Pester III are analogous art because they are from the same field of endeavor of hierarchical networks, which transmit monitoring, or alarm data. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Shuman by adding network status information at each multiplexing level and passing alarm information related to the network status to the multiplex stream passed to the next level of the tree hierarchy. The motivation for doing so would have been to detect and prevent major outages in this hierarchical network as suggested in lines 6-11 of Pester III.

Therefore, it would have been obvious to combine Pester III with Shuman for the benefit of network outage detection and prevention to obtain the invention as specified in claims 1 and 4.

Regarding claim 5, with the limitations of the parent claim 4 addressed above, Shuman discloses the limitation of the clock distribution module cards and bus control module cards being provided with an ID code in a serial framed control signal generated by said system timing generator, where the ID codes facilitate the step of multiplexing. The ID code is the address bytes transmitted from the computer downstream through the hierarchy. These address bytes are described, for example, in lines 61-65 of column 4. These ID codes (address bytes) facilitate the step of multiplexing as described in the passage from line 65 of column 4 through line 5 of column 5. This

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passage explains how the alarm data (sensor information) is passed back up through the hierarchy based on the address bytes. Further, the controller (computer 30 of figure 1) comprises a system timing generator because the address bytes control the timing of the propagation of the alarm data (sensor information) upstream through the hierarchy.

Regarding claim 17, with the limitations of parent claim 1 addressed above, Shuman discloses the limitation of the tree configuration being hierarchical in Figure 1. The different levels in the hierarchy include L1, L2, L3, and L4. Figure 1 of Shuman also discloses the limitation of said successively multiplexing including multiplexing by further distribution module cards at a hierarchical level above said distribution module cards disposed at said subsequent stage. The L4 level of multiplexing level modules the initial level of distribution module cards (at said subsequent stage) and the L3 level of multiplexing level modules is at a hierarchical level above L4. The L3 cards multiplex just as the L4 cards.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims **6 and 12-16** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 and 11-15 of U.S. Patent No. 6,643,791 in view of U.S. Patent 5,907,559 to Shuman et al.

Claim 5 of U.S. Patent No. 6,643,791 contains the limitations of the system timing generator, the plurality of clock distribution modules, and a plurality of bus control modules coupled to at least one level of the clock distribution modules of claim 6 of the present application. The claims of U.S. Patent No. 6,643,791 do not expressly disclose the limitation claim 6 of the multiplexing circuitry in each clock distribution module. Shuman discloses the limitation of claim 6 of multiplexing circuitry in the 8-1 MUX (62) of figure 4.

U.S. Patent No. 6,643,791 and Shuman are analogous art because they are from the same field of endeavor of hierarchical networks, which transmit monitoring, or alarm data. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify U.S. Patent No. 6,643,791 by adding multiplexing circuitry to each level in the hierarchy. The motivation for doing so would have been "to provide a simple method and device for monitoring many locations" as suggested in lines 8-9 of column 2 of Shuman.

Therefore, it would have been obvious to combine Shuman with U.S. Patent No. 6,643,791 to obtain the invention as specified in claim 6.

The steps of claim **12** of determining the size of the signaling server, assigning unique IDs, and generating a framed serial control signal are disclosed by the first 3 steps of claim 11 of U.S. Patent No. 6,643,791. U.S. Patent No. 6,643,791 does not expressly disclose the limitations of claim 12 of the step of generating a status signal encoded with alarm data, or the step of multiplexing the signal through the hierarchy.

Shuman discloses the limitation of generating alarm data in the sensor data as described in the rejection of claim 1 above. Shuman also discloses the limitation of multiplexing the alarm data into a serial bitstream in the 8-1 MUX (62) of figure 4 as described in the rejection of claim 1 above.

U.S. Patent No. 6,643,791 and Shuman are analogous art because they are from the same field of endeavor of hierarchical networks, which transmit monitoring, or alarm data. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify U.S. Patent No. 6,643,791 by adding multiplexing circuitry to each level (i.e. in the clock distribution modules) in the hierarchy and generating alarm data at the lowest level of the hierarchy (i.e. in the bus control modules). The motivation for doing so would have been "to provide a simple method and device for monitoring many locations" as suggested in lines 8-9 of column 2 of Shuman.

Therefore, it would have been obvious to combine Shuman with U.S. Patent No. 6,643,791 to obtain the invention as specified in claim 12.

All of the limitations of claims **13-16** are disclosed by claims 12-15, respectively, of U.S. Patent No. 6,643,791.

3. Claims 7-11 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over U.S. Patent No. 6,643,791 in view of U.S. Patent 5,907,559 to Shuman et al as applied to claim 6 above, and further in view of U.S. Patent 5,892,812 to Pester III.

U.S. Patent No. 6,643,791 and Shuman teach the limitations of claim 6 as indicated in the rejection above. These references do not disclose the limitation of claim 7 of a means for each CDC to insert it's own alarm data. Pester III discloses inserting alarm data at a subsequent stage which pertains to this stage. This limitation is taught in lines 38-40 of column 2: "If Stage 2 determines that there is an STP pair network trouble, it generates alarm and corrective action information and passes it to the Stage 3 controller or process". The STP pair network trouble is the alarm data pertaining to stage 2.

U.S. Patent No. 6,643,791, Shuman, and Pester III are analogous art because they are from the same field of endeavor of hierarchical networks, which transmit monitoring, or alarm data. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify U.S. Patent No. 6,643,791 by adding network status information at each multiplexing level and passing alarm information related to the network status to the multiplex stream passed to the next level of the tree hierarchy. The motivation for doing so would have been to detect and prevent major outages in this hierarchical network as suggested in lines 6-11 of Pester III.

Therefore, it would have been obvious to combine Shuman and Pester III with U.S. Patent No. 6,643,791 to obtain the invention as specified in claim 7.

The limitations of claims **8-11** are disclosed by U.S. Patent No. 6,643,791 as described below. The limitation of claim **8** of the system timing generator producing a system time clock based on a reference input of a predetermined frequency is disclosed in the system timing generator of claim 5 of U.S. Patent No. 6,643,791. The limitation of claim **9** of the bus segment comprising a CPCI bus segment is disclosed in claim 8 of U.S. Patent No. 6,643,791. The limitation of claim **10** of the reference input comprising a derived clock signal is disclosed in claim 7 of U.S. Patent No. 6,643,791. The limitation of claim **11** of serial control signal comprising a framed bitstream is disclosed in claim 9 of U.S. Patent No. 6,643,791.

Allowable Subject Matter

4. Claims **18-20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's amendments to the specification have been considered and the objections of the previous office action have been withdrawn.

6. Applicant's arguments, see page 11, lines 8-26, filed 2/24/04, with respect to the rejection of claim 1 under 35 U.S.C. 102(e) have been fully considered and are not persuasive. Examiner agrees with the argument in lines 8-12 of page 11 that the amended claim 1 overcomes the original rejection in view of 35 U.S.C. 102(e).

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Applicant further argued that Shuman represent different art from the present application. Examiner disagrees with this assertion. Shuman teaches a method of transmitting monitoring or alarm data in a hierarchical network which is the same field of endeavor of the invention as specified in claim 1. Therefore, claim 1 is rejected above under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,907,559 to Shuman et al in view of U.S. Patent 5,892,812 to Pester, III. The amended claim 1 has added the step of inserting (containing subject matter from original claim 2) and the step of providing (containing subject matter from original claim 3). The amended claim 1 has further added additional terminology to the transmitting, multiplexing, and forwarding steps. However, based on the new claim language, claim 1 is still obvious over Shuman in view of Pester.

7. Applicant's arguments, see page 12, lines 1-2, filed 2/24/04, with respect to new claims 17-20 have been considered. Claim 17 has been rejected and claims 18-20 have been objected to (see above for more detail).

8. Applicant's arguments, see page 12, lines 4-6, filed 2/24/04, with respect to claims 4-5 have been fully considered. However, upon further consideration of the reworded claims and the above cited references, claims 4-5 are now rejected under 35 U.S.C. 103(a).

9. Applicant's arguments, see page 12, lines 8-18, filed 2/24/04, with respect to claims 6-16 have been fully considered but they are not persuasive. Applicant cites Chart I-B in section 804 of the MPEP in arguing that the double patenting rejection is not applicable due to the filing date of U.S. Patent 6,643,791. However, examiner used

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the flow of Chart II-B to determine the applicability of this rejection. Chart I-B is used when determining if a double-patenting issue exists between two co-pending applications. Since this rejection involves an application and a U.S. Patent, Chart II-B was used. The examiner believes the rejection is proper as stated previously and restated above.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,058,104 to Yonehara et al and U.S. Patent 5,936,942 to McNeley et al teach multiplexing alarm signals. U.S. Patent 6,359,895 to Yamanaka and U.S. Patent 5,946,373 to Harris teach a hierarchical system for reporting alarm information.

U.S. Patent 6,707,795 to Noorhosseini teaches a hierarchical model of a network node used in correlating alarm information.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 703-305-9062. The examiner can normally be reached on 6:30-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 703-308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RCS 4-22-04
Robert C. Scheibel
Examiner
Art Unit 2666

Seema S. Rao
SEEMA S. RAO *4/30/04*
SUPERVISORY PATENT EXAMINER
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